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**Jonas T Hartwig** and **Daniele Rosso\*** ([drosso@iu.edu](mailto:drosso@iu.edu)). *Grothendieck rings of towers of twisted generalized Weyl algebras.*

Twisted generalized Weyl algebras (TGWAs) are a family of algebras that includes as special cases many algebras of interest in representation theory, like Weyl algebras and certain quotients of universal enveloping algebras. Their definition depends on the choice of a base ring  $R$  and certain parameters  $\sigma, t$ . In general TGWAs do not have a natural bialgebra nor Hopf algebra structure, however we show that, if we fix  $R$  and  $\sigma$ , there is an algebra map  $A(R, \sigma, tt') \rightarrow A(R, \sigma, t) \otimes_R A(R, \sigma, t')$ . This allows us to define a tensor product operation for modules of different TGWAs and an algebra structure on the direct sum (over all  $t$ ) of the Grothendieck groups of their categories of weight modules. We discuss examples of this construction and describe the resulting algebras. This is joint work with Jonas Hartwig. (Received August 29, 2020)